

We Claim:

1. A process for producing an *Antrodia camphorata* culture having pharmacological activity, comprising:

(a) inoculating a mycelial inoculum of an isolate of *Antrodia camphorata* into a medium suitable for growth of said isolate to result in a first culture;

(b) subjecting the first culture cultivated from step (a) to a first stage of agitation which is set at a first predetermined rate and for a first period of time to allow further growth of the inoculated isolate, so as to obtain a second culture proliferation with mycelium; and

(c) subjecting the second culture obtained from step (b) to a second stage of agitation which is set at a second predetermined rate different from the first predetermined rate, so as to subject the isolate under physiological stress.

2. The process of Claim 1, wherein the second predetermined rate is higher than the first predetermined rate.

3. The process of Claim 1, wherein the first culture from step (a) and the second culture from step (b) are cultivated in steps (b) and (c) by adjusting to a pH value ranging from 4.5 to 5.4.

4. The process of Claim 3, wherein the first culture from step (a) and the second culture from step (b) are cultivated in steps (b) and (c) by adjusting to a pH value ranging from 4.6 to 5.3.

5. The process of Claim 4, wherein the first culture from step (a) and the second culture from step (b) are cultivated in steps (b) and (c) by adjusting to a

pH value ranging from 4.7 to 5.2.

6. The process of Claim 1, wherein the medium is selected from the group consisting of potato dextrose broth, and a synthetic medium containing fructose as a major carbon source.

7. The process of Claim 6, wherein the medium is a synthetic medium containing fructose as a major carbon source.

8. The process of Claim 1, wherein the isolate is selected from the group consisting of CCRC 930032 (ATCC PTA-1233), CCRC 35396, 35398, 35716, 36401 and 36795.

9. A process for producing an *Antrodia camphorata* culture having pharmacological activity, comprising:

(a) inoculating a mycelial inoculum of an isolate of *Antrodia camphorata* into a medium suitable for growth of said isolate; and

(b) cultivating the culture resulting from step (a) by adjusting the pH value of the culture to a range from 4.5 to 5.4 throughout step (b).

10. The process of Claim 9, wherein the culture from step (a) is cultivated by adjusting the pH value of the culture to a range from 4.6 to 5.3 throughout step (b).

11. The process of Claim 10, wherein the culture from step (a) is cultivated by adjusting the pH value of the culture to a range from 4.7 to 5.2 throughout step (b).

12. The process of Claim 9, wherein the medium is selected from the group consisting of potato dextrose broth, and a synthetic medium containing fructose as a major carbon source.
13. The process of Claim 12, wherein the medium is a synthetic medium containing fructose as a major carbon source.
14. The process of Claim 9, wherein the step (b) is performed by agitating at a predetermined rate.
15. The process of Claim 9, wherein the isolate is selected from the group consisting of CCRC 930032 (ATCC PTA-1233), CCRC 35396, 35398, 35716, 36401 and 36795.
16. A process for obtaining a pharmacologically active composition from a culture of *A. camphorata*, comprising:
- (a) inoculating a mycelial inoculum of an isolate of *A. camphorata* into a medium suitable for growth of said isolate;
 - (b) cultivating the culture resulting from step (a);
 - (c) removing a major portion of insoluble substances from the culture, whereby a pharmacologically active solution is harvested; and
 - (d) processing the solution from step (c) so as to obtain a pharmacologically active composition containing fungal molecules having a molecular weight of no more than about 10 kDa.
17. The process of Claim 16, wherein the composition obtained in step (d)

contains fungal molecules having a molecular weight of no more than about 3 kDa.

18. The process of Claim 17, wherein the composition obtained in step (d) fraction contains fungal molecules having a molecular weight of no more than about 1 kDa.

19. A process for obtaining a pharmacologically active composition from a culture of *A. camphorata*, comprising:

(a) inoculating a mycelial inoculum of an isolate of *A. camphorata* into a medium suitable for growth of said isolate;

(b) cultivating the culture resulting from step (a);

(c) removing a major portion of insoluble substances from the culture, whereby an aqueous solution is harvested;

(d) processing the aqueous solution from step (c) so as to obtain a fraction containing fungal molecules having molecular weights of no more than about 1 kDa; and

(e) passing the fraction from step (d) through a water-immiscible phase from which the pharmacologically active composition is obtained.

20. The process of Claim 19, wherein the water-immiscible phase in step (e) is a stationary phase containing an effective amount of an absorbent capable of selectively adsorbing hydrophobic fungal molecules, and the stationary phase is eluted to obtain the pharmacologically active composition.

21. The process of Claim 20, wherein the stationary phase comprises Amberlite® XAD-4 resins as the absorbent.

22. The process of Claim 20, wherein the stationary phase is eluted by an eluent, which is an organic solvent having a polarity lower than water.
23. The process of Claim 22, wherein the eluent is an organic solvent having a polarity lower than methanol.
24. The process of Claim 23, wherein the eluent is selected from the group consisting of ethyl acetate and ethanol.
25. The process of Claim 19, further comprising:
performing reverse-phase partition chromatography on the composition from step (e) to obtain pharmacologically active fractions.
26. The process of Claim 1, wherein the pharmacological activity is an inhibitory activity against tumor or cancer cells.
27. The process of Claim 9, wherein the pharmacological activity is an inhibitory activity against tumor or cancer cells.
28. The process of Claim 16, wherein the pharmacological activity is an inhibitory activity against tumor or cancer cells.
29. The process of Claim 19, wherein the pharmacological activity is an inhibitory activity against tumor or cancer cells.
30. The process of Claim 25, wherein the pharmacological activity is an

inhibitory activity against tumor or cancer cells.

31. A pharmaceutical composition comprising a product obtained from the process according to Claim 1.

32. A pharmaceutical composition comprising a product obtained from the process according to Claim 9.

33. A pharmaceutical composition comprising a product obtained from the process according to Claim 16.

34. A pharmaceutical composition comprising a product obtained from the process according to Claim 19.

35. A pharmaceutical composition comprising a product obtained from the process according to Claim 25.

36. A method for the treatment of cancer or tumor diseases in a patient in need of such treatment comprising administering to the patient a composition containing a product obtained from the process according to Claim 1.

37. A method for the treatment of cancer or tumor diseases in a patient in need of such treatment comprising administering to the patient a composition containing a product obtained from the process according to Claim 9.

38. A method for the treatment of cancer or tumor diseases in a patient in need of such treatment comprising administering to the patient a composition

containing a product obtained from the process according to Claim 16.

39. A method for the treatment of cancer or tumor diseases in a patient in need of such treatment comprising administering to the patient a composition containing a product obtained from the process according to Claim 19.

40. A method for the treatment of cancer or tumor diseases in a patient in need of such treatment comprising administering to the patient a composition containing a product obtained from the process according to Claim 25.